

IN THE CLAIMS

1. (currently amended): A process for making an electronic device which comprises applying a non-aqueous solder mask ink ~~which is substantially free from organic solvent~~ to a dielectric substrate containing electrically conductive metal circuitry, exposing the solder mask ink to actinic radiation and/or particle beam radiation optionally followed by thermal treatment, whereby the solder mask ink is applied to selected areas of the substrate under the control of a computer by ink jet printing and wherein the solder mask ink comprises the components:

- A) 30 – 90 parts acrylate functional monomers which are mono or higher acrylate functional monomers comprising from 5 – 95% by weight of one or more monofunctional monomers;
- B) 0.1 – 30 parts metal adhesion promoting organic compound;
- C) 0 – 30 parts initiator;
- D) 0 – 10 parts polymer and/or prepolymer;
- E) 0 – 5 parts colorant;
- F) 0 – 5 parts surfactant; and
- G) not greater than 2 parts of organic solvent;

wherein all parts are by weight.

2. (original): A process as claimed in claim 1 wherein the viscosity of the solder mask ink is from 8 to 20 cPs (mPa.s) at 40°C.

3. (previously presented): A process as claimed in claim 1 wherein the weight average molecular weight of the acrylate functional monomer is not greater than 2,000.

4. (previously presented): A process as claimed in claim 1 wherein the acrylate functional monomer is isobornyl acrylate, tripropylene glycol diacrylate or trimethylolpropane ethoxylate triacrylate.

5. (previously presented): A process as claimed in claim 1 wherein the amount of monofunctional acrylate monomer is 70-95% by weight of the acrylate-functional monomer (component A)).

6. (currently amended): A process as claimed in claim 1 wherein the adhesion promoter metal adhesion promoting organic compound is an acrylate functional monomer.

7. (currently amended): A process as claimed in claim 1 wherein the ~~adhesion-promoter~~
metal adhesion promoting organic compound contains a metal chelant group which is a
carboxylic acid.

8. (currently amended): A process as claimed in claim 7 wherein the ~~adhesion-promoter~~
metal adhesion promoting organic compound is (meth)acrylic acid.

9. (currently amended): A process as claimed in claim 1 wherein the ~~adhesion-promoter~~
metal adhesion promoting organic compound is a polypropylene glycol tetra acrylate containing
(meth)acrylic acid.

10. (currently amended): A process as claimed in claim 9 wherein the ~~adhesion-promoter~~
metal adhesion promoting organic compound has an acid value of not greater than 120 mg
KOH/g.

11. (currently amended): A process as claimed in claim 1 wherein the amount of ~~adhesion~~
~~promoter~~ metal adhesion promoting organic compound is not greater than 15 parts by weight.

12. – 14. (cancelled)

15. (previously presented): A process as claimed in claim 1 wherein the electronic device is a
printed circuit board.

16. (previously presented): A process as claimed in claim 1 wherein the solder mask ink has
an acid value of not greater than 30 mg KOH/g.

17. (cancelled)

18. (previously presented): A process as claimed in claim 1 wherein the amount of initiator is
not less than 5 parts.

19. – 23. (cancelled)

24. (previously presented): A process as claimed in claim 1 wherein the number of parts of
components A) + B) + C) + D) + E) + F) = 100.

25. (currently amended): A non-aqueous solder mask ink ~~which is substantially free from organic solvents~~ which comprises the components:

- A) 30 to 90 parts acrylate functional monomers which are mono or higher acrylate functional monomers comprising from 5 – 95% by weight of one or more monofunctional monomers ;
- B) 0.1 to 30 parts metal adhesion promoting compound;
- C) 5 to 30 parts initiator;
- D) 0 to 10 parts polymer and/or prepolymer;
- E) 0 to 5 parts colorant;
- F) 0 to 5 parts surfactant; and
- G) not greater than 2 parts of organic solvent;

wherein the ink has a viscosity of not greater than 30 cPs (mPa.s) at 40°C and all parts are by weight.

26. (currently amended): A non-aqueous solder mask ink ~~which is substantially free from organic solvents~~ which comprises the components:

- A) 30 to 90 parts acrylate functional monomers which are mono or higher acrylate functional monomers comprising from 5 – 95% by weight of one or more monofunctional monomers;
- B) 0.1 to 30 parts metal adhesion promoting organic compound containing one or more carboxylic acid groups and having an acid value of not greater than 120 mg KOH/gm;
- C) 5 to 30 parts initiator;
- D) 0 to 10 parts polymer and/or prepolymer;
- E) 0 to 5 parts colorant; and
- F) 0 to 5 parts surfactant;
- G) not greater than 2 parts of organic solvent;

wherein the ink has a viscosity of not greater than 30 cPs (mPa.s) at 40°C and all parts are by weight.

27. (currently amended): A non-aqueous solder mask ink ~~which is substantially free from organic solvents~~ which comprises the components:

- A) 30 to 90 parts acrylate functional monomers which are mono or higher acrylate functional monomers comprising 5 – 95% by weight of one or more mono-functional monomers;
- B) 0.1 to 30 parts metal adhesion promoting organic compound containing one or more carboxylic acid groups;
- C) 5 to 30 parts initiator;
- D) 0 to 10 parts polymer and/or prepolymer;
- E) 0 to 5 parts colorant;
- F) 0 to 5 parts surfactant; and
- G) not greater than 2 parts of organic solvent;

wherein the acid value of the total solder mask ink is not greater than 30mg KOH/g and all parts are by weight.

28. (previously presented): An ink as claimed in claims 25, 26 or 27 wherein the number of parts of components A) + B) + C) + D) + E) + F) = 100.

29. (previously presented): A cartridge for an ink jet printer comprising a chamber and an ink wherein the ink is present in the chamber and the ink is a solder mask ink as claimed in claim 27.

30. (canceled)